Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

FAREWELL
TO THE BANKS OF THE J———

ADIEU to thee, wi heavy heart,
Dear bonny burn, I bid adieu:
Compelled unwilling to depart,
My very saul I leave wi you.
Sweet burn, while I my e'en can raise
To yon blue lift, that mantles a,
The thoughts of thee shall glad my days,
And cheer my nights when far awa.

Upon thy banks I first was taught
That friendship's not an empty name,
(Frae nature's bairns my bosom caught)
And loved synsine wi all its flame,
A flame that ne'er shall ken decay,
Though a' life's bitterest blasts should bla,
Till mingled wi' its kindred clay
Lies this poor heart when far awa.'

Till posied simmer blythe return,
Let lyart time glide gently by,
Then I'll revisit thee, sweet burn,
And taste pure friendship, love, and joy;
Then blest as when by thee I strayed,
While time and thou untented staw,
Each pang wi pleasure shall be paid,
That I shall thole while far awa.
Castleblaney. S. J.

LINES

On the tomb-stone of Mrs. HARRIET GORDON (wife of the late Hon. Capt. Adam Gordon) Æ. 35, in the church-yard of Portpatrick. Composed A. D. 1801, by the Rev. Doctor Mackenzie.

BENEATH this stone, but greater still to rise,
Heaven's fairest work, a lovely woman lies.
An infant also yields its early breath,
The mother hastes, and clasps her child in death.
The joy of youth, the beauteous bloom resign'd,
Were but the outward weeds she cast behind.
Wife, mother, friend, here ev'ry care supplied,
" Nor caus'd the world a tear, but when she died."

FOREIGN LITERATURE.

MR. DE GUIGNES has published his voyages to Pekin, Manilla, and the Isle of France, between the years 1784 and 1801, in 3 vols. 8vo. with an atlas, containing 60 plates, most of them double, and 5 large maps. Mr. de G. has given us all the information he could collect respecting China, during his stay there as French resident. He dates the Chinese empire no further back than 529 years, or the commencement of the Mogul dynasty; the country, in ancient times, being inhabited by wandering tribes, and barbarous nations, instead of a civilized people, united under one chief. We understand that a translation of it is in hand.

Few have considered to any extent how far natural history is capable of illustrating ancient works of art, or being illustrated by them. Prof. Blumenbach, however, who had entered upon the subject, in his disquisition on some Egyptian mummies, in the Philosophical Transactions for 1794, has lately gone into it very largely. His treatise, which embraces the three natural kingdoms, is a 4to vol. in Latin, illustrated with plates.

FRENCH NATIONAL INSTITUTE.

The class of ancient history and literature of the French National Institute, has proposed the following prize question for next year, "What was the civil and political state of the people of Italy under the government of the Goths? And what were the fundamental principles of the legislation of Theodoric and his successors? particularly, what were the distinctions it established between the conquerors and the conquered!" The papers must be written in French or Latin, and received before the first of April, 1810. The prize is a gold medal, of the value of 1500 franks (62*l.* 10*s.*)

The publication of the memoirs of the class had been suspended for some years, owing to particular circumstances, of the nature of which we are not informed; and to these succeeded other obstacles, which are now removed. What these obstacles were, will be known from the volumes that will soon appear in succession, and prove the class not to have been idle.

The spirit of inquiry, while turned toward objects of antiquity that may be interesting to us moderns, frequently meets with occasion for regret. This regret is not confined to the destruction of monuments of human industry, in the ruin, or entire disappearance of once flourishing cities, or the extinction of celebrated nations: the productions of nature herself are not secure against the ravages of time. In spite of the powerful means of regeneration she has bestowed on all beings, and though in general individuals only perish, while their species is continued, even these sometimes disappear, and vegetable nature itself experiences depopulation.

Mr. Mongez has long been of opinion, that the tree of Mount Atlas, from which the Romans, during the first ages of their empire, fabricated articles of furniture of high price, is not now to be found on that chain of mountains which covers the northern part of Africa from the ocean to the ruins of Carthage. He had already shown, that the balsam tree of Mecca, which was cultivated in Egypt and Judea, in the days of Dioscorides, was lost to those countries as early as the sixteenth century. According to Mr. de Lacy, the *lebak*, a shrub known in Egypt by the name of *persea*, had disappeared two centuries before. These two vegetables were known to the Greeks and Romans, whose writers themselves attest, that the *laser* and *citrum* were lost in the province of Cyrenica, on the confines of Egypt.

Thus we shall soon have to regret the loss of the cedars of Mount Lebanon. In 1783, Mr. de la Billardiere found only seven, and in 1788, Volney saw but five of the first magnitude, in a small wood of about a hundred of the same species, but much inferior in dimensions, the only remains of the vast forests that formerly covered the mountain. Precisely a century before de la Billardiere, another French traveller, Mr. de la Rogue, observed twenty of these large cedars; so that thirteen have been lost in the course of a hundred years.

The *citrus* or *citrum*, which grew on Mount Atlas, and is no longer found there, is the principal subject of the paper of Mr. Mongez. Pliny informs us, that in his time there was a table of its wood at Rome, for which Cicero had paid a million of sesterces, or, according to the estimation of Romé de Lille, 8230*l.* Sterling. Others had been bought at a still higher price: and one belonging to Cethegus was burnt, that had cost 1400 thousand sesterces, or 11523*l.* Pliny says this wood was known to Homer, and that the Greeks called the tree *thyon* and *thya*: but he is mistaken in saying, that it was one of the odoriferous woods burned by Circe to perfume her dwelling; for it is Calypso to whom Homer ascribes this luxury, in his Odyssey. Pliny, in another place, says, that Suetonius Paulinus had found the foot of Mount Atlas covered with high and thick forests of unknown trees; but that he described them in such a manner as convinced him they were the *citrum*. After a great deal of learned investigation, Mr. Mongez concludes, that the *citrum* of the Romans, and the *thyon* of the Greeks, was the same tree as the cypress-leaved juniper, which Olivier noticed on a branch of Mount Taurus, nearly in the same latitude as the northern part of Atlas; and mentioned in his travels in Persia, vol. 3. p. 486.

The establishment of a new standard for weights and measures in France, has led Mr. Mongez to examine the weights of the ancients. The *siliqua*, was one of the elements of the Roman pound, but what was its real weight? Apparently it was derived from the seed of some plant that bore pods; and for different reasons Mr. M. concludes, that it was the seed of the *ceratonia siliqua*, carob-tree: but he was unable to refer it, or any other leguminous seed, directly to the Roman pound. He found, however, that eighteen seeds of the carob-tree weighed 84 grains; the weight of the attic drachma, according to Romé de Lille. The lupin is the only submultiple of the little Attic or Samian drachma, nine seeds of which are equal to its weight of 63 grains. It appears, according to Paucton and de Lille, that the ancients had conceived the idea, lately carried into execution by the French, of deducing the different parts of their metrical system from one another, and ultimately the whole from the circumference of the earth. Proceeding on this idea, Mr. M. finds, that the Ro man pound, deduced from the cubature of the Roman foot, as fixed by Mr. Goffelin, exceeds the calculation of Rome de Lille only 153 grains, and that of the learned Eisenschmidt, in his Treatise on the Weights and Measures of the Ancients, published in 1708, only 15 grains.

Another subject of Mr. Mongez's research has been, the authenticity of accounts of intelligence speedily conveyed to a distance by the ancients. In the Agamemnon of Æschylus, Clytemnestra announces to the chorus, that Troy was taken that night by the Greeks; that Vulcan had brought the news; that his fires had shone in succession on eight mountains; and that from the last they had been seen at Argos, in the palace of the Atrides. The possibility of this fact Mr. M. has shown. The two most distant stations are Mount Athos, and Mount Macistus, in the northern part of the island of Eubœa, which are about ninety miles from each other. To prove the possibility of a fire being discerned from one of these to the other, Mr. M. observes that Mount Blanc may be seen at Lyons with the naked eye, a distance at least twenty miles greater; and the Peak of Teneriffe is visible forty leagues off at sea: so that the distance is not too great, if the height be sufficient for the curvature of the earth not to intercept the view. It is a little extraordinary, that we have so few data for the height of a mountain, on which so much has been said as Mount Athos. From an observation of Pliny, that at the summer solstice Mount Athos casts a shadow on the market-place of Myrrhina, in the island of Lemnos, Mr. M. calculates its height; and having found that of Macistus from other accounts, the fact appears very possible. The heights of these two stations are double those of the promontory of Lilybeum, in Sicily, and Hermæum in Africa, between which there was an intercourse by signal fires, according to Polyænus, at a distance of ninety-three miles. It is highly probable, that this passage in Eschylus was founded on tradition: and shall we add, that the proof of the practicability of the fact, confirms the story of the siege of Troy, and the situation of that city, though we do not suppose it would have had any effect upon such a mind as that of Mr. Jacob Bryant?

Mr. Mongez has next subjected to the calculation of time, distance, and the reach of the human voice, three passages in ancient authors: one in Cæsar's Commentaries, another in Diodorus Siculus, and a third in Cleomedes, the astronomer; where mention is made of the transmission of intelligence by the voice to very great distances. This test demonstrates the impossibility of the fact. He supposes therefore, that the communication was made by means of signals; and that the vocal correspondence was a fable propagated in the country, to conceal the true medium of conveyance. Mr. M. calculates, that, in the instances mentioned, the Gauls must have employed three thousand men, Eumenes fifteen thousand, and Xerxes twenty-six thousand; a sufficient proof of the impracticability. Not having the data before us, we can only say, we imagine Mr. M. confines the audibility of the voice within too narrow limits. A wager was lately decided by a man's voice being heard from Lambeth tower to Battersea bridge, a distance of about two miles and half in a direct line; and we are told a similar feat was performed some years ago.

Lately, in driving a pile in the isle of Swans, at Paris, for the Jena bridge, an ancient boat, buried in the mud, was broken. On collecting the remains, it appeared, that it was very long, narrow, and hollowed out of the trunk of a single oak. Mr. Mongez, after giving a description of it, advances a conjecture, that it was left there by the Normans, in 889, when they were obliged precipitately to raise the siege of Paris, after having invested it for four years.

M. Petit Radel, in an essay on the carob tree, presumes its seed to have been the pinereal bean of the ancients, and that from which Pythagoras directed his disciples to abstain: for we have the testimony of Aristoxenus, that he used the common bean as freely as other people. The bean of Pythagoras had the appearance of being changed into blood by boiling; and the pod of the carob tree is the only one we know, to which this description is applicable, its pulp actually resembling raw flesh. Mr. P. R. conjectures this to have been the bean, that the Flamen could neither touch nor name, any more than he could raw flesh; and also the black bean, that, as Ovid tells us, in his Fasti, was thrown to the femures and larvæ. He is confirmed in this opinion, by observing faithful representations of it on almost all ancient sarcophagi: he has found it on a gem, with a skeleton, and other emblems of death: it frequently occurs on sepulchral lamps: and it is probably this, that is usually considered as a palm branch, which occurs on the Etruscan vases, as they are called, most of which have been found in tombs. The seeds he supposes the ancients not to have adopted as a standard of weight, agreeably to the opinion of Mr. Mongez, mentioned in a former part of this article, but as a supplement to the weights of Asia. He adds, that the sirup extracted from the pod might still be used for various domestic purposes, as it was by the ancients: and he found it so abundant, that in an experiment, made by him and Mr.Darcet, a very thick sirup was obtained, equal in weight to half the fruit subjected to ebullition.

Mr. Petit Radel has likewise brought forward fresh arguments in defence of his opinion concerning the antiquity of the mode of construction, called by him Cyclopean, against new objections made to it, but the discussion would occupy too much of our room.

The veracity of Herodotus, whose authority had till lately been rated very low in France, has been defended by Mr. Jeoffry St. Hilaire, in regard to various objects of natural history. What he has said of the crocodiles of the Nile, Mr. St. H. has verified in the Thebaid itself.

Mr. Quatremère de Quincy has undertaken the defence of Pliny, and in particular with regard to his account of the contest between Apelles and Protogenes, in which he shows the Roman author to have been well acquainted with the beauties, and difficulties of the art, as practised by the Greeks, though he has been misunderstood by different commentators.

While he acknowledges the merits of Count Caylus, who has given drawings and explanations of the funeral pile of Hephestion, and the car that transported the corpse of Alexander from Babylon to Egypt, described at considerable length by Diodorus Siculus. Mr. Q. unwilling to subscribe to any authority without exercising his own judgment, has examined for himself the account of the ancient author, and thinks the learned antiquary has not been so successful in those points, as he has in many others. He begins with the funeral car of Alexander, and following the text of Diodorus, step by step, he first combats the description by Count Caylus, and then gives his own, accompanied by appropriate designs. His disquisition embraces every thing concerning not only the proportions, arrangements, and decoration of the car itself, but the golden coffin it was intended to convey, the numerous team required to draw it, and every thing that was employed to effect the removal. He concludes his labours by an abstract of the historical accounts we have of the fate of the remains of the Macedonian conqueror, and how long they subsisted.

Mr. Sainte Croix, the author of the Critical Examination of the Historians of Alexander, has investigated the situation and extent of the lakes Van, Urmiat, and some others on the west of the Caspian sea, with their different appellations, and the mistakes these have occasioned in geography.

Mr. Toulongeon produced a dissertation on the civil state of the families of ancient Rome, and the political relations between them as patricians or plebeians.

Mr. Millin, having made a tour through the south of France, observed several customs analogous to those of the ancient Greeks and Romans, particularly a practice of bull-fighting in the vicinity of Arles, similar to the *taurokathapsies* of Thessaly, as delineated on ancient monuments.

Mr. Silvester de Lacy has attempted to give a history of the religion of the Druses, as a necessary introduction to which he has prefixed a sketch of the various sects, that branched out from Mohammedanism.

Mr. Pastoret has long been engaged on a work not less important for its object, than vast in its plan, and arduous in its execution; a general history of legislation. The first part, which will soon appear, treats of ancient laws, embracing their history among the Egyptians, Assyrians, Babylonians, Phœnicians, Hebrews, Persians, and the various nations comprised under the name of Greeks, with some others.

The most difficult branch of philology is unquestionably the origin of the languages, which Mr. Delisle de Sales has attempted to investigate. Conrad Gessner had considered the question in a just point of view, when in 1555 he published his Mithridates, or treatise on the connection and differences of various languages, but at that period his materials were too scanty. Hervas has gone much farther in his picture of all known languages, the Spanish edition of which is yet far from complete, though it extends already to six quarto volumes. Adelung's work, the part of which printed before his death, comprised a hundred and fifty-nine Asiatic languages, it is to be feared will not now be completed. We hope Mr. de Sales will prove more fortunate. In what we already know of his labours he deduces the following consequence from his investigation of alphabets. 1. The inscriptions, hitherto unknown, that cover the ruins of Tshelminar, in Persia, are formed from a real alphabet. 2. This alphabet, the basis of which is a right line, either perpendicular, horizontal, or variously inclined, may be considered from its simplicity as a parent alphabet. 3. It was not till several centuries after, that a second element was added to the primordial character, by joining a curve with the right line; and all alphabets have arisen from the varied combination of these elementary types. Mr. de S applie his system to the examination of all the monuments that remain to us from the ages preceding Homer, the chief of which are the Sigean marbles, the obelisks, the pyramids, and the ruins of Balbec, Palmyra, and Persepolis; and as these remains of the highest antiquity are connected by an imperceptible thread with others of an age nearer to us, which may serve to illustrate them, as the Rosetta marble, &c. the author has been led to connect these with his researches.

The same gentleman, in the form of a philosophic dialogue, between Phocion and Nicocles, has attempted to display the noble character of Phocion, and the principles of politics, in the spirit of the ancients, always connected with the laws of morality. This alliance he exhibits as the sole pledge of the safety and duration of states.

Mr. Ginguené submitted to the class a fragment of his literary history of Italy, in which he treats of the literature of the Arabs; and the influence it had on the revival of letters in Europe.

To the general labours of the class may be added those of the permanent committees, to which particular works are entrusted. Of these there are six principal ones, the occupations of which are sufficiently indicated by their titles. 1. The committee of historians of France: 2. that of the ordinances of the French kings: 3. that of the notices of the manuscripts in the imperial library: 4. that of literary labours, the office of which is the *superintendence and general direction* of the former three: 5. that of medals and inscriptions, the first volume of which will be presented to his majesty in manuscript in the course of the year (1808): 6. that of the literary history of France, intended to continue the work begun several years ago by the Benedictines.

The public sitting of the mathematical and physical class of the French institute was held on the 2d of January, 1809. A double prize had been offered for a "theory of the perturbations of the planet Pallas, discovered by Dr. Olbers: or in general the theory of planets, the eccentricity and inclination of which are too considerable for their perturbations to be calculated with sufficient precision by the known methods." Not to go beyond what is indispensable, on such a difficult subject, nothing was required further than algebraic formulæ, but so arranged, that an intelligent calculator might apply them securely, and without mistake, either to the planet Pallas, or to any other already discovered, or that may be discovered hereafter. Notwithstanding these restrictions, no paper having been sent, the subject is still left open, till the 1st of October 1810. The prize is a medal of the value of 6000 franks(£250.)

The ordinary prize subject for next year is: "To examine whether there be any circulation in the animals known by the names of asteriæ, echini, and holothuriæ; and, if there be, to describe its course and organs." The description must be accompanied with observations made on living animals, and embrace the vessels of the respiratory organs, if there be any such as well as those of the principal circulation. It would be desirable too, to examine the chemical effect of the respiration on the air and water, but this is not absolutely insisted on. The examination of one species of each family only is required; but it is expected to be by no means superficial, and to be accompanied with drawings, so that the principal details may easily be verified. The prize is 3000 francs (£125) and the term as above.

The history of the mathematical division of the class exhibits this year a singular circumstance; one of the most difficult and most important points of the mundane system treated with equal success, though after different methods, by two geometricians of the first rank; and to both of them the investigation was suggested by an interesting paper read to the class by a young geometrician. Astronomers had remarked a perceptible acceleration in the course of the moon: consequently other planets, and among them the earth, might have a similar acceleration. If the motion of the earth be accelerated, it must be owing to its approaching the centre of motion: and, if it do this, will it not ultimately fall into the Sun? this danger indeed must be infinitely remote, for the acceleration cannot but be extremely slow, and it is proved by the example of the Moon, that the acceleration continues but for a time, and is afterward changed into a retardation. Still however the question is particularly interesting to astronomers, who in all their calculations suppose the invariableness of the ellipses described by the planets.

Mr. Laplace first examined this question, and found, by a learned but merely approximate calculation, that the mean motions and axes are really invariable; at least taking into consideration only the first powers of the masses, and the second of the eccentricities and inclinations. Mr. Lagrange, struck with this conclusion, endeavoured to extend it, and proved by a curious theorem, that the proposition was true, considering even all the successive powers of the eccentricities. But what would be the result, were the masses considered in terms of two dimensions? This inquiry demanded great labour, and no less acumen: yet Mr. Poisson undertook it, and demonstrated, that if any acceleration exist, it can only depend on terms of four, six, or eight dimensions, and of course must be altogether imperceptible. As soon as Mr. Poisson had demonstrated his theorem, Mr. Lagrange and Mr. Laplace perceived, that it naturally flowed from principles and methods they had formerly laid down: in consequence they were both led to demonstrate the proposition more generally, but each in a different way.

The physical division of the class presented to the emperor a sketch of the history of the sciences from the year 1789, which will soon be published.

The principal discoveries in chemical science are those to which Mr. Davy led the way, and which have been pursued in France chiefly by Messrs. Gay-Lussac and Thenard.

The experiments of Sir James Hall, too, have been repeated by Mr. Drée. Having exposed to fusion, in close vessels, under irresistible pressure, fragments of rocks with trap or petrosilex for their base, he found, that they assumed all the appearance of stony lavas; and that the chrystals of feldspar in them were not altered, which explains the singular fact of so many very fusible crystals contained in lavas that have rendered it questionable whether they had ever been fused.

The invention of the art of laminating zinc by heating it, is claimed, for the late Macquer and Mr. Sage, who practised it long ago: and Messrs. Dony and Poncelet, of the department of the Ourthe, have converted calamine by simple sublimation into metal sufficiently pure to be laminable. The ore yields them one third its weight of metal, which is much cheaper than lead.

Another happy application of chemistry is that of procuring from wood an acetic acid as pure as radical vinegar, the manufacture of which has been carried on some time by Mr. Mollerat. It answers extremely well for aromatic vinegars; but possesses a little acrimony, on account of which it is not quite so fit for the table. The wood distilled for this purpose yields as much charcoal as in the ordinary way, beside a great deal of tar.

In consequence of the interruption of the intercourse between France and the West Indies, Mr. Proust and Mr. Parmentier have paid the utmost attention to the extraction of sugar from grapes.

Mr. Morveau has given a history of attempts to construct instruments for the measure of high degrees of heat, in which he does Wedgwood more justice, than he has generally received in France. He afterward describes an instrument of his own invention sufficiently delicate to indicate changes in the length of a metallic bar that do not exceed a thirteen thousandth part of its length. Such a bar of platina is the only thing sufficiently dilatable, and at the same time unalterable by fire, to serve properly for a pyrometer; but the difficulty is to place it on a scale, that will not dilate. This, M. de Morveau* hopes soon to accomplish.

Mr. Gay-Lussac has just developed a beautiful law of general chemistry on the proportion of metal, that enters into each metallic salt, and that of oxygen necessary for its oxidation. He has shown, that a metal, which precipitates another from an acid solution, finds in the metal precipitated all the oxygen necessary for it to become oxidated, and dissolve in such a quantity, that the solution shall be neutralized to the same degree. The quantity of oxygen therefore remains constant, whatever be the proportion necessary to each metal: and the acid in each salt is proportionate to the oxygen of the oxide, and requires so much more metal to saturate it, in proportion as the metal requires less oxygen for its oxidation. This law affords a very simple mean of determining the composition of all metallic salts; for it is sufficient to know the proportion of acid in one salt of each genus, to know it in all; and a single analysis will allow us to dispense with the rest.

Mr. Darcet jun. has shown, that soda and potash, prepared with alcohol, and heated to the point at which they begin to evaporate, notwithstanding still retain nearly a third of their weight of water.

Messrs. Fourcroy and Vauquelin have presented two important memoirs, one on animal mucus, the other on uree.

Among the anatomical subjects, that have engaged the attention of the class, few are equally interesting with the memoir on the structure of the brain and nervous system by Drs. Gall and Spurzheim of Vienna. According to these gentlemen, the cinereous or cortical substance is the organ from which issue the nervous threads, that constitute the white or medullary substance. Wherever the cinereous substance exists, some of these threads originate; and wherever any of these threads originate, this substance exists. The spinal marrow is not a bundle of nerves descending from the brain; on the contrary the nerves termed cerebral may be traced to the medulla oblongata or spinalis; and the brain and cerebellum themselves are but developements of fasciculi from the medulla oblongata, in the same manner as the nerves come from it. The committee have found almost all the anatomical propositions of Drs. G. and S. agreeable to nature: but they think it proper to add, that this has no connection whatever with Dr. Gall's theory of the appropriation of different parts of the brain to the different functions of the mind.

---

* This is the first time for many years of our meeting with this gentleman by his old name, of which he was robbed at the beginning of the French revolution. For a long while he was citizen Guyton only. As the fury of the revolution subsided, he became citizen Guyton-Morveau. After titles had revived from their ashes, *citizen* soon gave way to the ancient *monsieur*: at the commencement of the paragraph above we have M. Morveau, and at length we have M. de Morveau as formerly.

Professor Dumeril has considered in new points of view the bones and muscles of the trunk in man and various animals. The grand principle he seeks to establish is, that nature is as uniform as possible in her means, continuing the same through numerous varieties, as long as they are effective, and never adding a new organ, unless when new circumstances require greater efforts and more powerful instruments.

Mr. Villars of Strasburg has presented two papers on the structure of the nerves. He thinks he has perceived, by means of the microscope, that the covering of the nerves is itself composed of nervous filaments: but the committee, notwithstanding they have taken great pains to ascertain this, could not satisfy themselves of the fact.

The anatomy of plants is indebted for many new and important facts to the researches of Mr. Mirbel, who has succeeded Mr. Ventenat in the Institute. The Royal Society of Gottingen, having made this anatomy a subject of one of its annual prizes, has occasioned the publication of several dissertations, the chief of which are those of Link, Treviranus, and Rudolphi, all professors in different German universities. Agreeing in most facts with Mirbel, they not only add some observations to his, but contradict him on certain points; this has induced him to publish a defence of his theory, in which he gives it more precision, exhibiting it in the form of aphorisms; while he endeavours to show, that most of the objections arise from his having been misunderstood, or his observations not having been repeated with sufficient care.

Mr. Mirbel has likewise presented to the class two papers, one on the germination of the gramineous family of plants, the other on the distinguishing characteristics of the monocotyledonous, and dicotyledonous plants.

In the first he shows, that the stigmata of wheat, unite in a small canal, which reaches to the base of the embryo; and that the cotyledon, as Jussieu thought, is a fleshy substance, in which the radicle and plumula are imperceptibly developed, and which opens length-wise to let them pass, so that it performs the office of a sheathing leaf.

From the second it appears that the cotyledons have great analogy to the leaves, those of the sensitive plant, being irritable, of the borages hairy, &c. in short they are true leaves in the seed. If, when there are two cotyledons, they appear opposite in plants the leaves of which are alternate, it is because the stalk cannot develope itself in the seed, and the interval between the cotyledons cannot be distinguished. From the different perceptible analogies between them, Mr. M. infers, that the number of the cotyledons must relate to some circumstance respecting the leaves; and he imagines that the monocotyledonous plants are uniformly those, the leaves of which ensheath each other. Proceeding to examine the formation of the wood, Mr. M. shows, that it is always composed of filaments interspersed in a cellular texture, resembling the medulla of of the dicotyledons; but that in many of the monocotyledons these filaments are formed at the circumference, as well as in the centre. The latter in consequence have a double vegetation; one at the circumference, increasing the diameter of the trunk; the other at the centre, augmenting its density. He considers each of the filaments of the trunk of the monocotyledons, as if it answered to an entire trunk of a dicotyledon; and shows that in each of these filaments a series of operations takes place as complete as in those trunks.

The competitor of Mr. Mirbel for the vacancy in the Institute, was Mr. Decandolle, who beside his previous titles to it, had sent the class early in the year, a work on plants, with compound flowers, in which he makes a separate family of those, the florets of which have two unequal lips, and distributes those termed cinarocephalous, according to the lateral or terminal insertion of the seed. It was considered, however, that his talents would be more useful in the celebrated school, in which he teaches botany, and at the head of the fine garden under his care in a more southern climate.

This sitting showed in general, that botany is cultivated in France with more ardour than ever. The memoir on the family of orchideæ, by Mr. du Petit Thouars, a specimen of a greater work on the natural families of plants; those of Mr. de Longchamp on narcissusses, Mr. Jaume-St.-Hilaire on the orobanches, and Mr. de Cubieres on the lotetrees, and the monography of eringuims, by Mr. de la Roche, are proofs of this.

Mr. du Petit-Thouars in particular has determined to publish his theory of vegetation, founded on the developement of the bud in two directions, which was noticed in our former report, No. XI. p. 59.

Mr. Ventenat himself, terminated his laborious career, by a paper on the genera samyda, and casearia, of which he makes a new family next to that of the rhamnoides. This piece was intended for the continuation of the *Jardin de Cels*, a work interrupted by his death. He lived long enough to carry to some extent, though not to finish, his description of the garden of Malmaison, that magnificent monument of her Majesty's enlightened love of the useful sciences, which no doubt will be continued.

The history of animals has witnessed the completion of Mr. Pluvier's grand work on coleopterous insects, and is enriched with a description of all the gelatinous animals united under the name of medusa by Linnæus. Mr. Péron, who collected a great number in his voyage to the south has increased this family to more than a hundred and fifty species. The following is his account of their singularities. "Their substance seems to be merely a coagulated water, yet the most important functions of life are exercised in it. Their multiplication is prodigious, yet we know nothing of the peculiar mode in which it is effected. They are capable of attaining several feet in diameter, and fifty or sixty pounds in weight, yet their nutritive system escapes our eyes. They execute the most rapid and long continued movements, yet the details of their muscular system are imperceptible. They have a very active species of respiration, the true seat of which is a mystery. They appear extremely feeble, yet fish of considerable size, form their daily prey, and dissolve in a few moments in their stomach. Many species of them shine amid the darkness of night like balls of fire; and some sting or benumb the hand that touches them: yet, the principles and agents of both these properties remain to be discovered."

All the medusas have a gelatinous body, nearly resembling the cap of a mushroom, which Mr. P. after the example of Spallanzani, names *umbrella*: but they differ in wanting or having a mouth; in the mouth being simple or multiplicious; in the presence or absence of a production resembling a pedicle; and in the edges of this pedicle or of the mouth itself, being furnished with tentacula, or filaments, more or less numerous. From these characters Mr. P. forms divisions and subdivisions, under which every possible kind of medusa may be arranged. Very fine paintings by Mr. Lesueur, who accompanied him on the voyage, illustrate the various forms and colours of these animals, which are often very pleasing to the eye.

To his examination of their external characters, Mr. P. has added very interesting ones on the interior structure of the medusas; and in particular of the genus which Mr. Cuvier named *rhizostome*, because he supposed, that the filaments bordering its tentacula were so many suckers; and that the nourishment drawn in by them was received into a central cavity, whence it was distributed to the whole body by an infinite number of vessels disposed with great regularity, and particularly numerous about the edges of the umbrella.—The four apertures at the sides of the base of the pedicle appeared to Mr. Cuvier, to be respiratory organs. Mr. P. on the contrary, having seen many living rhizostomes take in small animals by these four apertures, and digest them in the four cavities to which they lead, supposes them to be four mouths and as many stomachs; while the great vascular apparatus, that fills the pedicle and the borders of the umbrella, is more probably appropriated to respiration, as it is almost always found full of air.

Mr. Cuvier read a paper on certain reptiles, the skeletons of which are found in strata of our globe. These had all been taken for crocodiles, and even for the species common in the Ganges, the *gavial*; but the lacerta monitor is also among them, and those that most resemble the gavial have striking characteristics that distinguish them. All of them are found in strata much deeper, and consequently more ancient, than those that contain bones of land quadrupeds. The environs of Maestricht conceal the bones of a large animal of this family, which some have taken for a crocodile, others for a fish. Mr. C. attempted to show, that this also was a monitor lizard, but it is the giant of its kind. It measures in length, upwards of eight metres (26 feet) Its tail much shorter in proportion, but broader than that of other species, formed a powerful oar; and every thing renders it probable, that it had sufficient strength, and was so good a swimmer as to live amid the waves of the ocean. Its bones too are found with those of large sea turtle, and among thousands of sea shells.

Mr. Jefferson, president of the United States, has sent the Class a fine collection of fossile bones dug up on the banks of the Ohio. The greater number belong to the large animal improperly called mammoth, by the Americans, and to which Mr. Cuvier has given the name of mastodonte: but there are likewise some belonging to the true mammoth, of the Russians, or the other large animal much resembling the Indian elephant, the remains of which are so common in Siberia. These two gigantic beings therefore formerly inhabited together all the northern cap of our globe. The destruction of these enormous races, and of so many others, victims to the same catastrophe, cannot be explained, till we are well acquainted with the strata in which they are buried, as well as their nature and succession.

These Mr. Cuvier and Mr. Brongniart have endeavoured to study in the vicinity of Paris. As far as they have been able to penetrate into the earth round that capital, they have found it composed of various strata, evidently of different origin. The lowest part is a vast mass of chalk, that reaches to England, and contains nothing but unknown shells, several of which belong even to unknown genera. On this chalk rests a bed of potter's clay, containing no organized body. This in several places is covered by limestone, the hardest of which is used for building, and which is full of shells, most of them of unknown species, but of known genera, or approaching nearer than the preceding to those that live in our present seas. Hills of gypsum are scattered, as if by accident, sometimes on the clay, at others on the lime-stone, and contains thousands of bones of land animals entirely unknown, of which Mr. Cuvier has put together the skeletons, and established the characters. In this gypsum, and the clay intermixed with it, or immediately covering it, there are no shells but fresh-water ones: but these are afterwards covered with thick strata of sea-shells. A vast mass of sand, without any organized bodies, crowns all our heights; and what is most remarkable of all the most superficial stratums, that which covers the whole, is mixed with fresh-water shells alone. It is only in the bottoms of vallies, or in cavities hollowed out of this superficial stratum, that are found the bones of elephants and other animals, the *genus* of which is known, but not the *species*.

From the observations of these gentlemen it appears, that the sea, after having long covered this country, and several times changed its nature and inhabitants, gave place to fresh-water, in which these gypsums were deposited; but that it returned at least once to cover the land it had abandoned, and destroy the beings, that had lived on it. On this occasion perished the palæotheria, and the anoplotheria. Every thing renders it probable however, that it returned a second time, and that the elephants disappeared in this second catastrophe.

Mr. Sage presented to the class a ferruginous petrifaction, having some apparent resemblance to a bundle of tobacco leaves tied round with threads, but probably part of a stalk of bamboo, or some other jointed plant.—He likewise gave descriptions and analysis of a few stones; and communicated some experiments on the cohesion that lime contracts with various substances.

Mr. Brochant, mine engineer, communicated some observations on strata much more ancient than those in the vicinity of Paris, which Werner has called transition-strata, because they are placed between the primitive mountains, anterior to all organization, and the secondary strata, that abound with remains of animals. Most of them are composed of fragments of the primitive rocks, united into pudding-stones by cements of various kinds, in which we begin to perceive occasionally remains of organized substances, either vegetable or animal. Saussure had already noticed these in the Alps but Mr. B. has traced them to much greater extent, principally along that side of the Alps which looks toward France.

Mr. Lescallier has shown, that the climate of Liguria, is more favourable to the plants of hot countries, than any other in the same latitude: the winter, though longer, not being so cold, because the Apennines shelter it from the north wind; while the summer is less scorching from the vicinity of the sea on one hand, and the snows on the other.

Mr. Girod Chantrans has given the natural history of the department of the Doubs.

Mr. Seguin, who formerly found gelatine, the true remedy against intermittent fevers, has this year tried albumen with good success. He has already cured forty-one patients, by giving them the whites of three eggs diluted with warm water, and sweetened with sugar, just before the fit comes on. He says this convenience attends both these remedies, if the fit that follows the first dose, be not mitigated, you must not expect a cure from them.

Mr. Desessartz has endeavoured to show, that relaxing medicines, and gentle evacuants, are preferable to acrid medicines in the treatment of dropsy. This is particularly the case in dropsies, that succeed painful affections of the mind.

Messrs. Cels, Tessier, and Huzard, have drawn up a scheme for a code of rural law, the object of which is to protect landed property from every imaginable injury. It is transmitted to a select committee in every department for examination.

Mr. Tessier has drawn up, by order of government, popular instructions, for the cultivation of cotton in France.

Mr. Bosc has described twenty-eight species of the ash, half of which, though cultivated in the gardens and nurseries round Paris, have not been noticed by naturalists. Some of them are large trees, superior in elasticity and flexibility to the common ash.

Mr. Portal read a case of disease, in which the patient experienced all the symptoms of pulmonary consumption, with others, the cause of which could not be divined. On opening the body, an abscess was found in the liver, communicating with the abscess in the lungs by an aperture through the diaphragm.

Mr. Pelletan presented a work on internal aneurisms. This gentleman has not only abated the disease, and retarded its progress, by frequent venesection, and the other known means, but in three instances has accomplished a radical and unequivocal cure.

Some Jews at Frankfort are said to have commenced a nutmeg manufactory, but the offenders were soon detected and punished. They formed their artificial nutmegs of meal roasted brown, mucilage of gum Arabic, and powdered nutmegs.

LIST OF NEW PUBLICATIONS.

BIOGRAPHY.

SOME Particulars in the Character of the late Charles James Fox, 1s. 6d.

LAW.

The Trial of an Action, brought by E. Loveden esq. against T. Raymond Barker, esq. for